

# ECOLOGICAL MONOGRAPHS

OFFICIAL PUBLICATION OF THE  
ECOLOGICAL SOCIETY OF AMERICA

---

Volume 15, 1945

---

Published Quarterly by  
The Duke University Press  
Durham, N. C., U. S. A.

# ECOLOGICAL MONOGRAPHS

A QUARTERLY JOURNAL  
FOR ALL PHASES OF BIOLOGY

---

**EDITORS:** BOTANY, C. F. KORSTIAN, Duke University, Durham, N. C.  
ZOOLOGY, A. S. PEARSE, Duke University, Durham, N. C.

---

**BUSINESS MANAGER:** EXIE DUNCAN, Duke University Press.

---

## MEMBERS OF THE EDITORIAL BOARD

**1943-45**

Arthur W. Sampson, University of California, Berkeley, California.  
Walter P. Taylor, U. S. Fish and Wildlife Service, College Station, Texas.

**1944-46**

F. W. Albertson, Fort Hays Kansas State College, Hays, Kansas.  
H. E. Ewing, United States National Museum, Washington, D. C.

**1945-47**

F. C. Gates, Kansas State College, Manhattan, Kansas.  
R. W. Pennak, University of Colorado, Boulder, Colorado.

---

**EX OFFICIO:** Charles E. Olmsted, University of Chicago.  
Thomas Park, University of Chicago.

The editorial board of this journal will consider ecological papers which are in general long enough to make twenty printed pages or more. Shorter ecological papers should be submitted to the editor of *Ecology*, which is also published by the Ecological Society of America. Both journals are open to ecological papers from all fields of biological science.

Manuscripts should be typewritten and may be sent to any member of the Editorial Board. Proof should be corrected immediately and returned to the Managing Editor at the address given above. Reprints should be ordered when proof is returned. Fifty copies, without covers, are supplied to authors free; covers and additional copies at cost. Correspondence concerning editorial matters should be sent to the Managing Editor; that concerning subscriptions, change of address, and back numbers to the Business Manager.

Subscription price, \$6.00 per year. Parts of volumes can be supplied at the rates for single numbers, \$1.50 each. Missing numbers will be supplied free when lost in the mails if written notice is received by the Business Manager within one month of date of issue. All remittances should be made payable to the Duke University Press.

Agents in Great Britain: The Cambridge University Press, Bentley House, 200 Euston Road, London, N.W. 1. Prices can be had on application.

---

Entered as Second-class Matter at the Postoffice at Durham, North Carolina

COPYRIGHT, 1945, BY DUKE UNIVERSITY PRESS

gf

Museum Lib.  
Direct

Museum

QH  
540  
E17

## TABLE OF CONTENTS

Volume 15, 1945

### NUMBER 1, JANUARY

PAGE

Some Contributions of a Fifteen-Year Local Study of the Northern Bobwhite to a Knowledge of Population Phenomena.....	Paul L. Errington	1
Ecology and Management of the Redhead, <i>Nyroca americana</i> , in Iowa.....	Jessop B. Low	35
The Influence of Types of Soil upon the Local Distribution of Some Mammals in Southwestern Utah.....	Ross Hardy	71

### NUMBER 2, APRIL

The Ecological Relationships of the Food of the Columbian Black-Tailed Deer, <i>Odocoileus hemionus columbianus</i> (Richardson), in the Coast Forest Region of Southern Vancouver Island, British Columbia.....	Ian McTaggart Cowan	109
Ecological Studies of Sessile Rotatoria, Part II. Dynamics of Populations and Social Structures.....	W. T. Edmondson	141
The Bird Population of an Elm-Maple Forest with Special Reference to Aspection, Territorialism, and Coactions.....	Arthur C. Twomey	173

### NUMBER 3, JULY

An Ecological Reconnoissance in the Medicine Bow Mountains.....	Irving H. Blake	207
The Annual Cycle of Plants, Mosquitoes, Birds, and Mammals in Two Brazilian Forests.....	David E. Davis	243
A Seven-Year Quantitative Study of Succession in Grassland.....	J. E. Weaver and W. E. Bruner	297

### NUMBER 4, OCTOBER

The Vegetation of Sierra de Nipe, Cuba.....	J. P. Carabia	321
Limnological Conditions in Ice-covered Lakes, Especially as Related to Winter-kill of Fish.....	John T. Greenbank	343
Injury and Death or Recovery of Trees in Prairie Climate.....	F. W. Albertson and J. E. Weaver	393
Limnological Studies of Western Lake Erie. V. Relation of Limnological and Meteorological Conditions to the Production of Phytoplankton in 1942.....	David C. Chandler and Owen B. Weeks	435

# The Ecological Society of America

---

## OFFICERS FOR 1945

**President,** ALFRED C. REDFIELD, Oceanographic Institution, Woods Hole, Massachusetts.

**Vice-President,** JOHN M. AIKMAN, Iowa State College, Ames, Iowa.

**Secretary,** WILLIAM A. DREYER, University of Cincinnati, Cincinnati 21, Ohio.

**Treasurer,** HENRY J. OOSTING, Duke University, Durham, North Carolina.

**Additional Members of the Executive Committee:** ORLANDO PARK, ROBERT F. GRIGGS.

---

## AIMS

THE ECOLOGICAL SOCIETY OF AMERICA was founded in 1915 for the purpose of giving unity to the study of organisms in relation to environment, as a means of furthering intercourse between persons who are approaching widely different groups of organisms from closely related points of view, for the stimulation of ecological research, and to assist the development of the utilities which may be served by ecological principles.

## MEMBERSHIP

Membership is open to persons who are interested in the advancement of ecology or its applications, and to those who are engaged in any aspect of the study of organisms in relation to environment.

The following classes of membership are recognized:

- Associate Members, annual dues, \$1.00.
- Contributing Members, annual dues, \$2.00 to \$10.00 or more.
- Active Members, annual dues, \$5.00.
- Institutional Members, annual dues, \$6.00.
- Sustaining Members, annual dues, \$10.00.
- Sustaining Institutional Members, annual dues, \$11.00.
- Life Members, single fee, \$100.00.
- Sustaining Life Members, single fee, \$200.00.

Three dollars of the dues received from active members, or of the interest in the case of Life Members of both classes, are applied as the annual subscription to *ECOLOGY*. Six dollars of the dues of Sustaining Members, and of the interest from the fees of Sustaining Life Members, are applied as the annual subscription to *ECOLOGICAL MONOGRAPHS*, the quarterly journal for longer articles. Members in arrears for dues will, on payment, be supplied with back numbers so far as they are available, but the journals do not hold themselves responsible for reserving back numbers in anticipation of the payment of back dues.

All members receive the *BULLETIN OF THE ECOLOGICAL SOCIETY OF AMERICA*, issued by the Secretary in March, June, October, and December. It contains announcements of meetings and excursions of the Society, abstracts of papers, programs, items of current interest to members, and occasional membership lists.

Associate members do not receive *ECOLOGY* or *ECOLOGICAL MONOGRAPHS* and are not eligible for office, but may become members in any one of the above classes upon the payment of the appropriate dues.

Contributing members may designate the function of the Society to which the contribution, in excess of one dollar, is to be devoted and they receive appropriate publications dealing with the activities for which the contribution is made. Members of any class may be Contributing members also. Contributing members, if not belonging to any other class, are not eligible for office.

Checks should be made payable to Ecological Society of America. Application blanks for membership may be obtained from the Secretary, to whom all correspondence concerning membership should be addressed.